Regional Haze SIP Control Measures

Progress Goals

■ Set progress goals for each Class I area in the State that:

– Provides for an improvement in visibility for the 20% most impaired (i.e., worst visibility) days

– Ensures no degradation in visibility for the 20% least impaired (i.e., best visibility) days

3

308(d)(2)(iii) Natural visibility conditions must be calculated by estimating the degree of visibility impairment existing under natural conditions for the most impaired and least impaired days, based on available monitoring information and appropriate data analysis techniques.

Setting Reasonable Progress Goals

- Ideal world RPG set at or below Glide Path
- Responsible for control measures on that which can reasonably be controlled
  - Anthropogenic sources within Idaho must be reasonably controlled.
  - Must document natural emissions and emissions outside of Idaho jurisdiction.
- Set RGP and document reasoning and scheduling in SIP.

4

Uniform Rate of Reasonable Progress Glide Path
Craters of the Moon National Monument
20% Worst Days
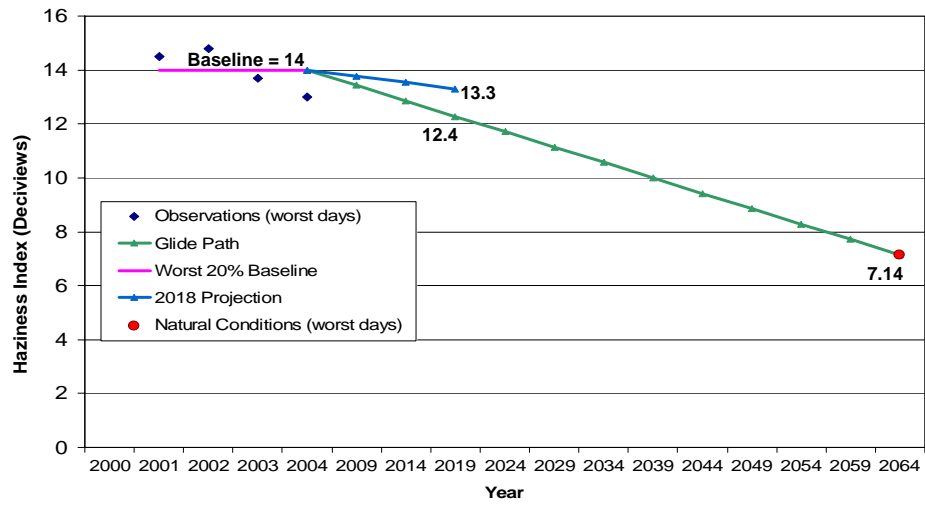
Conceptual Model for Control Measures

- Visibility Impacts - Class I area
- Determine source contributions in and near Class I areas
- Determine if control measures are feasible
- Identify and summarize candidate control measures
- Review control measures for feasibility
- Selected control measures - analyzed for emission reductions and scheduling consideration for the Regional Haze SIP.
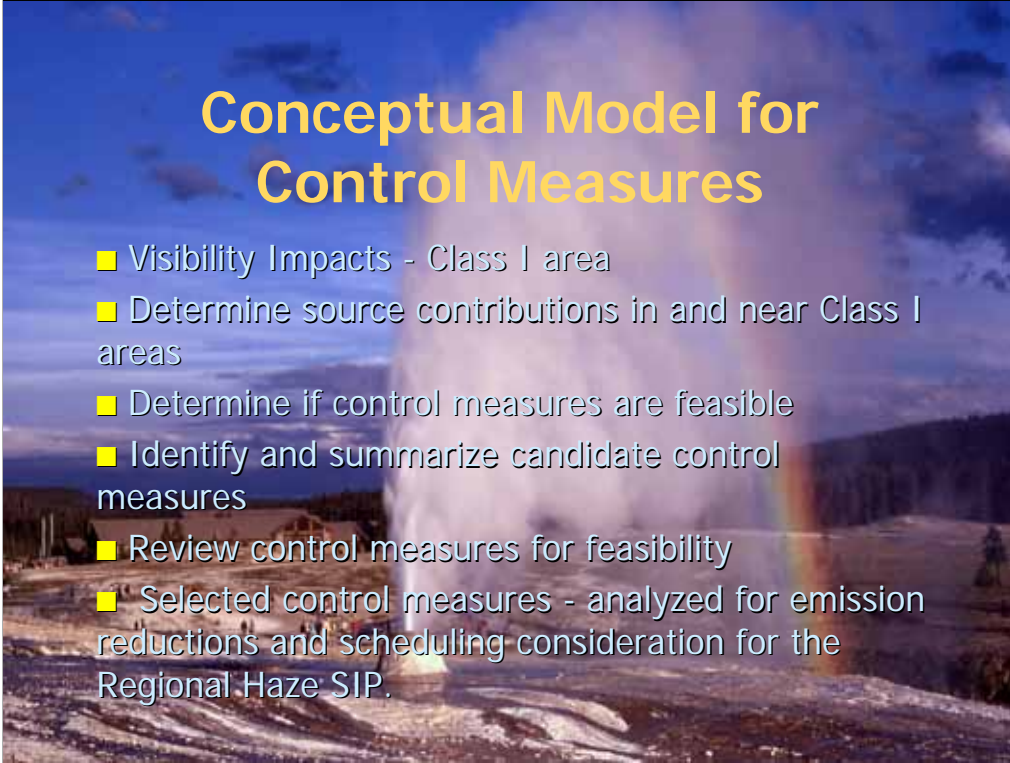
Conceptual Model for Control Measures

■ Step 1: Visibility Impacts - Class I area

– Approach: Identify concentrations visibility impacting constituents including seasonality changes

– Tools: Monitoring data showing concentrations for the best and worst days

– Monitoring data showing time series

– Back trajectory to identify location of air mass and possible source contribution

Approach: Improve data looking at source pies of percentage of concentrations. Available through Attributes of Haze report and

Tools: Monitoring data showing percentage of concentrations of visibility impacting constituents for the best and worst days. Source of information Attributes of Haze

Monitoring data showing time series and concentrations of visibility impacting constituents.

Back trajectory for best and worst days to identify location of air mass and possible source contribution.
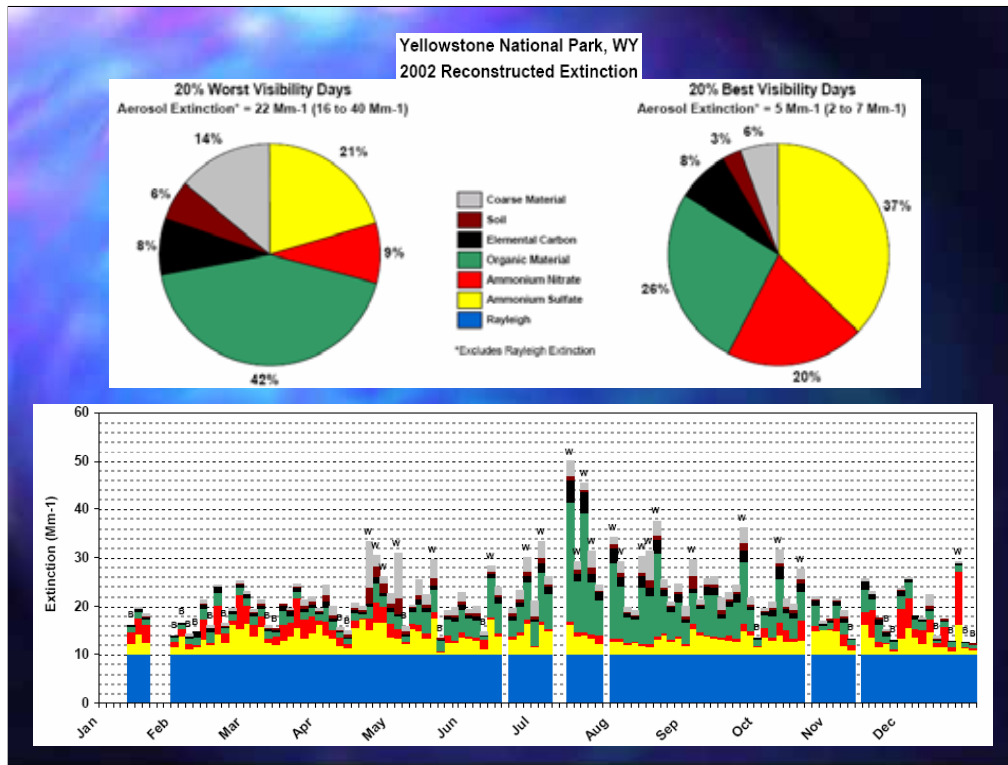
Monitoring data – filter analysis

This slide shows the most and least impaired days and the percent of concentrations that lead to the light extinction.

The green areas from July through November are primarily fire issues. When those are removed the percent attributable to NOx and SOx becomes apparent.

Aerosol Light Extinction (**Bep**):   The attenuation of light due to scattering and absorption of aerosols.

   Bep = 3F(RH)[Sulfate] + 3F(RH)[Nitrate] + 4[OMC] + 10[LAC] + 1[Soil] + 0.6[CM]

Deciview is a logarithmic change in the light extinction equation. The eye can perceive a 10% so the deciview it puts the light extinction in a human context for Regional Haze.

Conceptual Model for Control Measures

■ Step 2: Determine source contributions in and near Class I areas

– Approach: Emission Inventory to determine sources attribution of visibility impairment. Area, mobile and point sources will be reviewed for contributions. Where appropriate single and groups of sources will be analyzed.

– Tools: The base and 2018 emission inventory developed by WRAP will be used to identify source contributions

9

Go to WRAP web page the In and Near reports.

Approach: Emission Inventory and GIS will be used to determine sources attribution of visibility impairment. Area, mobile and point sources will be reviewed for contributions. Where appropriate single and groups of sources will be analyzed.

Tools: The base and 2018 emission inventory developed by WRAP will be used to identify source contributions

The In and Near emission inventory will be used to identify sources within xxx number of miles/kilometers of Class I areas. Where necessary DEQ emission inventory data will be used to update information.

Idaho Falls Regional Office Summary

	TOTAL NOX	17,592	tpy		
	TOTAL SO2	1,686	tpy		

Pollutant	Point	Area	Non road	On-road	Biogenics	Fire
NOx	2%	14%	25%	36%	12%	10%
SO2	8%	21%	35%	13%	0%	23%

Pocatello Regional Office Summary

	TOTAL NOX	20,126	tpy		
	TOTAL SO2	15,222	tpy		

Pollutant	Point	Area	Non road	On-road	Biogenics	Fire
NOx	21%	15%	19%	31%	11%	2%
SO2	94%	1%	3%	1%	0%	0.5%
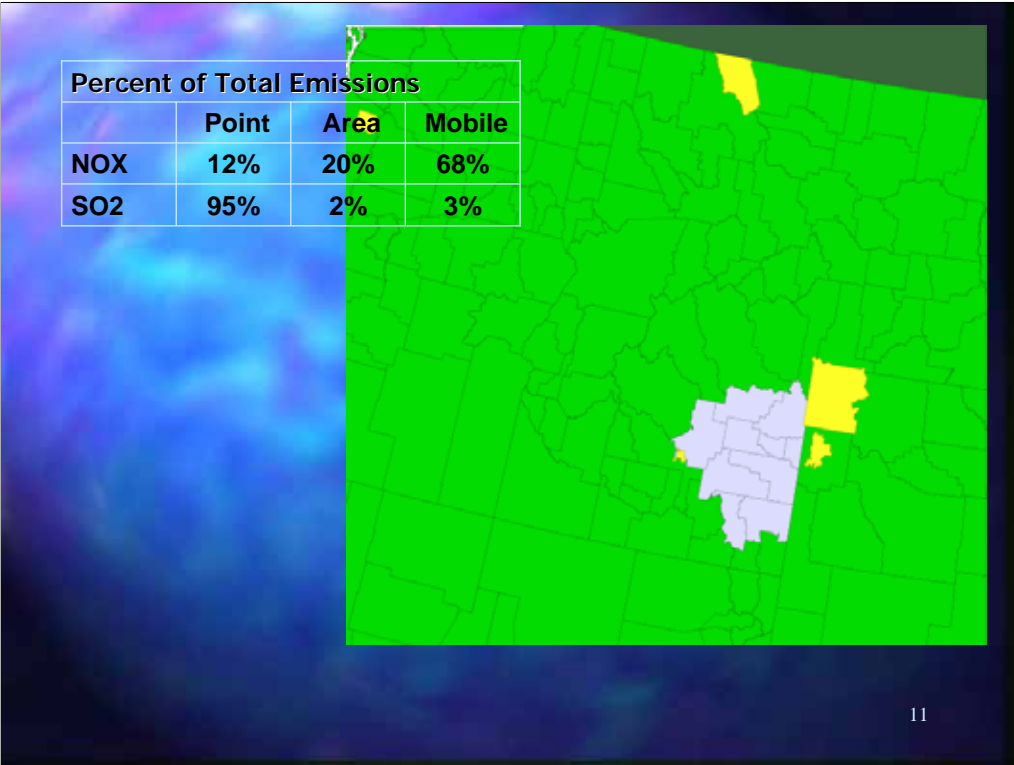
10

Emission Inventory

Percent of Total Emissions			
	Point	Area	Mobile
NOX	12%	20%	68%
SO2	95%	2%	3%

Emission Inventory

Approach: Emission inventory will be reviewed to determine if the source is natural or anthropogenic. Anthropogenic emissions will be reviewed to determine of controls exist.

Tools: The WRAP emission inventory will be used to segregate emissions by source type, contribution and whether Idaho has the ability to control ie, anthropogenic and within Idaho boundaries.

Approach: A literature search will be preformed to identify control measures for those sources deemed anthropogenic and controllable by Idaho. These sources will be identified in Step 3

Tools: A literature search will be preformed to identify information on control measures that have been used or are currently under consideration

Control measures

CARB Proposed List of Measures to Reduce Particulate Matter.

http://www.arb.ca.gov/pm/pmmeasures/sb656_staff_report_board_approved.pdf

Agricultural Sources Clearinghouse of Air Pollution Reduction Methods

http://www.capcoa.org/Agclearinghouse/index.html

WRAP Dust Handbook

http://www.wrapair.org/forums/dejf/fdh/index.html

Evaluation of PM10 State Implementation Plans and their applicatility in Western Class I areas.

http://www.wrapair.org/forums/class1/projects/pm10sips/050805PM10_SIP_Review_Final_Report.pdf

Literature sources

CARB Proposed List of Measures to Reduce Particulate Matter
- http://www.arb.ca.gov/pm/pmmeasures/sb656_staff_report_board_approved.pdf

- Agricultural Sources Clearinghouse of Air Pollution Reduction Methods
- http://www.capcoa.org/Agclearinghouse/index.html

- WRAP Dust Handbook
- http://www.wrapair.org/forums/dejf/fdh/index.html

- Evaluation of PM10 State Implementation Plans and their applicability in Western Class I areas
- http://www.wrapair.org/forums/class1/projects/pm10sips/050805PM10_SIP_Review_Final_Report.pdf

- Midwest Regional Planning Organization (PRO) Identification and Evaluation of Candidate Control Measures
- http://www.ladco.org/reports/rpo/MWRPOprojects/Strategies/Final%20Control%20Measures.pdf

Conceptual Model for Control Measures

■ Step 5: Review control measures for feasibility

– Approach: Appropriate Idaho control measures analyzed for technical, economic and political feasibility

– Tools: Information from the literature search as well as EPA information on BACT, RACT, MACT, LEAR, RACM and BACM to develop a frame work the consideration

– The Regional Haze rule requirements considered during this phase of the process

– This information summarized in a table/report as part of the ranking and selection process

15

Conceptual Model for Control Measures

■ Step 6: Selected control measures - analyzed for emission reductions and scheduling consideration for the Regional Haze SIP

  – Approach: Analyze and model selected control measures to determine Regional Haze SIP reasonable progress demonstration

  – Tools: Work will be done in conjunction with the affected communities to determine realistic emission reductions and the time frames they will occur

16

Thanks!

17